

## CLAIMS:

1. A method for detecting voltage disturbances in a voltage waveform of an alternating-current power system comprising the steps of:
  - detecting when the deviation of the voltage waveform of the alternating-  
5 current power system from a reference waveform exceeds a predetermined voltage threshold;
  - initiating integration of the difference between the voltage waveform of the alternating-current power system and the reference waveform at the time the deviation of the detecting step exceeds the predetermined voltage threshold; and  
10 comparing the result of said integration step to a predetermined threshold value to establish a particular voltage disturbance when said result exceeds said predetermined threshold value.
2. The method of claim 1 wherein said predetermined threshold value is  
15 varied based on the point on the voltage waveform at which said integration was initiated.
3. The method of claim 1 wherein said integration is initiated only if the point on the waveform is within first predetermined portions of the waveform.  
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4. The method of claim 3 wherein said predetermined portions exclude second predetermined portions about the zero crossing points of the waveform.
5. The method of claim 1 wherein said integration is performed over a  
25 predetermined time interval.
6. The method of claim 5 wherein said predetermined time interval is determined to prevent response to switching transients.

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